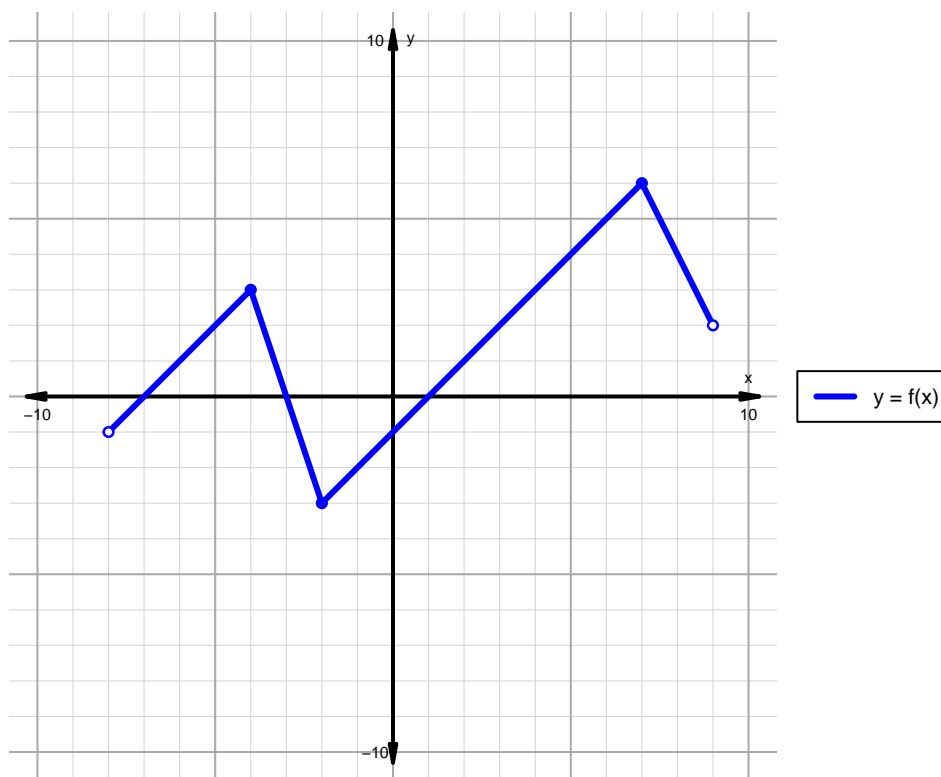


Name: \_\_\_\_\_

Date: \_\_\_\_\_

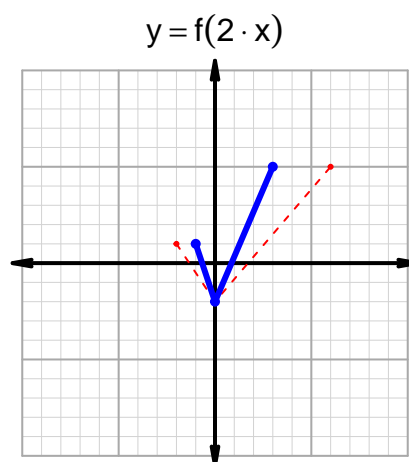
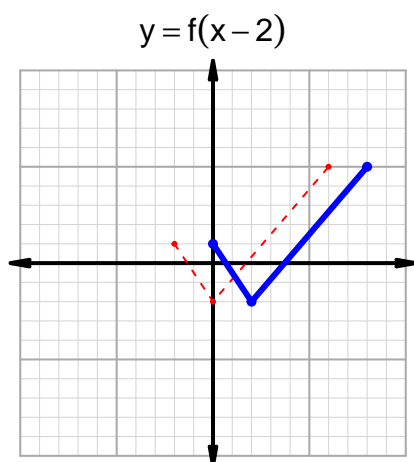
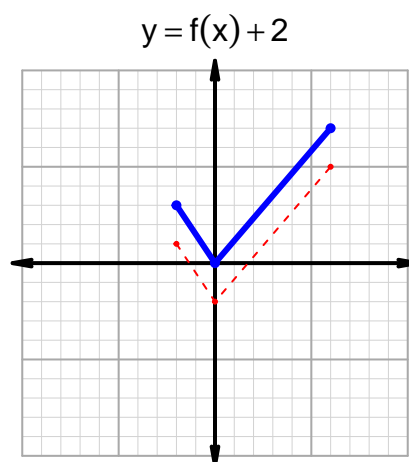
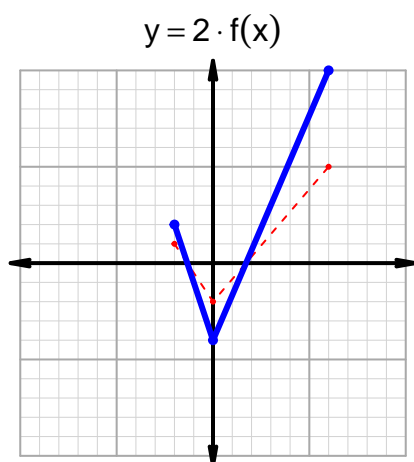
**Intervals, Transformations, and Slope Solution (version 24)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, -3) \cup (1, 9)$
Negative	$(-8, -7) \cup (-3, 1)$
Increasing	$(-8, -4) \cup (-2, 7)$
Decreasing	$(-4, -2) \cup (7, 9)$
Domain	$(-8, 9)$
Range	$(-3, 6)$

## Intervals, Transformations, and Slope Solution (version 24)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 36$  and  $x_2 = 50$ . Express your answer as a reduced fraction.

$x$	$g(x)$
36	51
50	61
51	50
61	36

$$\frac{f(50) - f(36)}{50 - 36} = \frac{61 - 51}{50 - 36} = \frac{10}{14}$$

The greatest common factor of 10 and 14 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{7}$$